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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|----------------------------------|------------------------|
| 10/803,420 | 03/18/2004 | Manoj Kumar Singhal | 15474US01 | 5543 |
| 23446 7590 11/09/2007 MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661 | | | EXAMINER HARPER, VINCENT PAUL | |
| | | | ART UNIT 2626 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/803,420 | Applicant(s) SINGHAL ET AL. | |
| | Examiner V. Paul Harper | Art Unit 2626 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-3, 6-8 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oh et al. (US Patent 5781696), hereinafter referred to as Oh, and in view of Quatieri ("Discrete-Time Speech Signal Processing" Prentice Hall, 2002, pp. 595-597), hereinafter referred to as Quatieri.

Regarding **claim 1**, Oh discloses an apparatus for speed-variable audio playback. Oh's teachings include:

- retrieving frames of the original audio signal (Fig. 5, original signal, necessarily in frames/segments);
- skipping frames at a rate according to a desired playback speed (col. 5, lines 60-65, doubling the audio play-back speed is achieved by selecting every other frame);
- wherein said desired playback speed is greater than the original playback speed (col. 5, lines 60-65, doubling speed);
- applying a window function to the remaining frames (col. 5, line 65 through col. 6, line 2, applying a window function);

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- converting the signal with the windowed frames from digital to analog format (col. 6, lines 35-38); and
- using the original frequency to playback the analog format signal (col. 6, lines 38-46, where the original playback rate would necessarily be used).

But Oh does not specifically teach “receiving the **encoded** original audio signal.” However, the examiner contends that this concept was well known in the art, as taught by Quatieri..

In the same field of endeavor, Quatieri teaches the use of speech coding where coding techniques can be used to transmit and receive coded speech (p. 595, Fig. 12.1, note speech is received and decoded).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Oh by specifically providing the features, as taught by Quatieri, because it is well known in the art at the time of invention the coding of a speech signal reduces the bit-rate (Quatieri p. 595, ¶1) and the combining of coding with speed-variable audio playback expands the range of applicability of Oh’s speed variable technique (Oh, abstract, note applications that include multimedia equipment and computers).

Regarding **claim 2**, Oh in view of Quatieri teaches everything claimed, as applied above (see claim 1). In addition, Quatieri teaches “the encoded original audio signal is encoded in the frequency domain using one of a plurality of encoding schemes, the method further comprising frequency-domain decoding of the encoded original audio

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signal" (in pp. 595-597, various encoding techniques are discussed including frequency domain techniques [LPC, subband coding, etc.] where inverse operations are performed, ¶1).

Regarding **claim 3**, Oh in view of Quatieri teaches everything claimed, as applied above (see claim 2). In addition, Quatieri teaches "decoding said encoded signal using a decoding scheme corresponding to said one of a plurality of encoding schemes; applying an inverse transform to the encoded audio signal; and applying an inverse window function" (see rejection of claim 2; Fig. 12.1 includes decoding, p. 595, in the last sentence of ¶1, at the receiver the inverse operations are performed).

Regarding **claim 6**, this claim has limitations similar to claim 1 and is rejected for the same reasons.

Regarding **claim 7**, this claim has limitations similar to claim 2 and is rejected for the same reasons.

Regarding **claim 8**, this claim has limitations similar to claim 3 and is rejected for the same reasons.

Regarding **claim 11**, this claim has limitations similar to claim 1 and is rejected for the same reasons.

Regarding **claim 12**, this claim has limitations similar to claim 2 and is rejected for the same reasons.

Regarding **claim 13**, this claim has limitations similar to claim 3 and is rejected for the same reasons.

Regarding **claim 16**, Oh in view of Quatieri teaches everything claimed, as applied above (see claim 1). In addition, Oh teaches "skipping frames at a rate according to a desired playback speed further comprises skipping frames at a rate according to a desired playback speed, wherein the frames correspond to time intervals" (col. 2, lines 26-54, $xm(n)$ corresponds to a sample interval used to generate a speech source component; col. 5, lines 40-65, speech source components are deleted to adjust playback speed).

Regarding **claims 17 and 18**, these claims have limitations similar to claim 16 and are rejected for the same reasons.

2. Claims 4, 5, 9, 10, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oh in view of Quatieri and further in view of well known prior art (MPEP 2144.03).

Regarding **claims 4 and 5**, Oh in view of Quatieri teaches everything claimed, as applied above (see claim 1). In addition, Oh teaches the use of a variable to for determining play-back speed (col. 6, line 34). But Oh does not specifically teach "the desired playback speed is a **predefined default value**" or "the desired playback speed is a **programmable value**." However, the examiner takes official notice of the fact that the setting of a variable to a predefined [constant or initial] value or allowing it to be adjustable was well known in the art.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Oh as described above, because such techniques are commonly used in software-based applications.

Regarding **claims 9 and 10**, these claims have limitations that are similar to claims 4 and 5 and are rejected for the same reasons.

Regarding **claims 14 and 15**, these claims have limitations similar to claims 4 and 5 and are rejected for the same reasons.

Response to Arguments

3. Applicant's arguments filed 9/25/07 have been fully considered but they are not persuasive.

4. Applicant asserts on REMARKS page:

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Assignee respectfully submits that "skipping frames" does not read on "selecting every other speech source". It is further noted that the speech components are extracted on the basis described in Col. 2, Line 28 - Col. 3, Line 5.

Oh teaches the generation of frames based on a windowing function (col. 2, lines 26-54), where $x(n)$ corresponds to the input audio signal and $x_m(n)$ is the modulated audio signal (i.e. a frame or a partition of samples from the audio signal). Oh further teaches that $x_m(n)$ is then used to generate a speech source component (first equation in col. 2), and that the speech source components are deleted to increase playback speed (col. 5, lines 40-65). In other words, deleting (or skipping) a speech component corresponds to deleting a window (or frame), where this is done to adjust the playback speed.

5. Applicant further asserts:

Moreover, while "skipping frames" does not read on "selecting every other speech source", Oh clearly does not teach "skipping frames at a rate according to a desired playback speed, wherein the frames correspond to time intervals" as recited by claims 16-18. It is submitted that the "speech source" are defined as described in Oh, Col. 2, Line 28 - Col. 3, Line 5, but clearly the "speech source" do not "correspond to time intervals". Accordingly, it is submitted that claims 16-18 should be allowed notwithstanding claims 1, 6, and 11.

As stated above, a speech source component corresponds to a window ($x_m(n)$), which is over a time interval. And a speech source component can be deleted (skipped) to adjust the playback speed (col. 5, lines 40-45).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to V. Paul Harper whose telephone number is (571) 272-7605. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

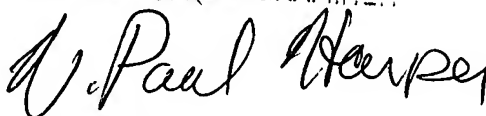
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11/08/07

VPH

V. PAUL HARPER
PRIMARY PATENT EXAMINER

A handwritten signature in black ink that reads "V. Paul Harper". The signature is written in a cursive style with a large, stylized "V" at the beginning.